

The Biological Sciences at Carthage College



Biology Hall

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PURPOSE

Biology has long been recognized as one of the important subjects of college curricula, not only because it is a basic science, but because of its cultural value.

The study of biological sciences is prerequisite to the professions of medicine, medical technology, physiotherapy, biological research, X-ray technique, bacteriology, nursing, social service, agriculture and forestry, and to the teaching of home economics, physical education, botany, zoology, and related subjects.

Life is deeply enriched by an appreciation of the world of nature, and a knowledge of nature's secrets is increasingly important for college trained people because of the demands made upon teachers, ministers, scout masters, and other leaders of youth, for guidance and instruction in nature lore. To meet these needs Carthage College maintains a fully equipped Biology Department, in which one may major in botany, zoology, or a combined course.

SETTING

Carthage College is situated in the heart of Hancock County, in west central Illinois, a section of the state scarcely surpassed in geological, scientific, literary and historical interest. Carthage College is fortunate in being located on one of the great bird fly ways of the United States, hence it is unusually well fitted for the study of Ornithology. The soil is largely glacial till, deposited over the rolling hills which were shaped by the scouring of glaciers in ages past. Important geological formations are found in Hancock and adjoining counties. One of the largest known geode beds, from which tons of geodes have been shipped to scientists all over the world, lies near Nauvoo; while petroleum geodes are found in few places in the world, save near Niota. This territory is exceptionally rich in fossils. Many of our fine museum fossils have been found locally; while Hancock County fossils, worked out in bas-relief by the late Mr. Charles Wachsmuth of Burlington, Iowa, and the late Mr. Lisbon Cox of Keokuk, Iowa, have been placed in every great museum in the world.

EQUIPMENT

The Biology Department is unusually well equipped. It has its own building, laboratories, a wealth of preserved and mounted specimens of plant and animal life, a rich herbarium, a large museum, nature gardens, a pool, cold frames, and a two unit greenhouse. It is also equipped with outdoor laboratories and nature haunts, comprising a seven acre Wild Life Preserve two miles from the College; a small tract of wooded land immediately adjoining Biology Department grounds; and a station on the Mississippi River, comprising over 200 acres of rugged lands equally valuable to biologists and geologists.

Biology Hall is a handsome brick structure, built in 1905 as a gymnasium. In 1931, upon the erection of the Field House, this building was released, and thru years of planning and labor it has been converted into our present commodious and convenient Biology Hall.

The main floor of the building is given over to the offices, the library, the well lighted and suitably equipped laboratories, and the large lecture

room, equipped with a Delineascope usable interchangeably for slides and opaque projection. The Botany laboratory and the main lecture room were completed early, through the generous annuity provision of the late Miss Jennie Hunt, of Polo, and this unit was made a memorial to Miss Hunt's parents. The Botany Laboratory contains the suitably encased herbarium with its wealth of illustrative plant materials.

The Bacteriology, Embryology, and Anatomy suite consists of a sterilization room, an inoculation room, and the advanced laboratory. It is well equipped with glassware, stone topped desks, steam and dry sterilizers,



**Anatomical Studies, Assisted by
"Oscar" the Skeleton.**

incubators, skeletal and embryological exhibits and slides, bacteriological microscopes, and a most excellent skeleton on which origins and insertions of muscles are indicated.

The Mark Tandy Memorial Library, containing over 1800 volumes and hundreds of pamphlets and magazines, was partially equipped by his heirs as a memorial to the late Mark Tandy, and the encased books willed to us by Mr. Tandy form the nucleus of the library.

The former Taxidermy suite, the Tri-Beta suite, the combined Assembly Room and Psychology Laboratory, and the Departmental Printing Office, occupy the basement. The former Taxidermy suite, consisting of a laboratory and shop, is equipped with work tables, cabinets, sink, motor, work benches, and tools. The main room is now used as a Human Physiology Laboratory.

The Tri-Beta suite consists of kitchenette, dining room, and a large ante-room. The serving cupboard, "Noah's Ark", contains an endless variety of "plant and animal dishes" collected from many states of the union. These dishes are very gay for banquets, and other social gatherings of the department.

One large room encircled by seats with hinged lids, concealing firewood for the huge fireplace (a memorial to the late Dean Letta Simmons and the late Mrs. Mary Robbins), may be readily and quickly transformed from a Psychology and Zoology Laboratory into a social room or banquet hall. Here Tri-Beta meetings, banquets, and the annual Christmas party are held. The piano, recently purchased by Tri-Beta, completes the picture.



Basement Fireplace, Biology Hall.

The "print shop" contains a hand press and necessary printing equipment. Here museum labels and other departmental materials are printed, from time to time.

On this floor are also the greenhouses. The warm room is 12 ft. X 24 ft., with an annex 6 ft. X 12 ft. The cool room is 10 ft. X 27 ft. In these units are housed experimental plants from the U. S. Bureau of Plant Introduction including Bamboos from the Orient, Aloes and other plants from the island of Madagascar, and Cacti from Mexico and Cuba, as well as a wide range of interesting plants from other sources.

Two huge greenhouse aquaria care for the water plants and fish which grace the outdoor pool in summer. The nature gardens, the borders, and the large greenhouse terrace are a blaze of color from early spring to late autumn.

The trellis on the east side of the Biology Building area has for years been clothed with choice vines of many species. Due to the placing of the new men's dormitory immediately south of Biology Hall, certain of the panels of the trellis have been temporarily transplanted, but those that remain are still



Aloes in Greenhouse



Greenhouse, Pool and Terrace

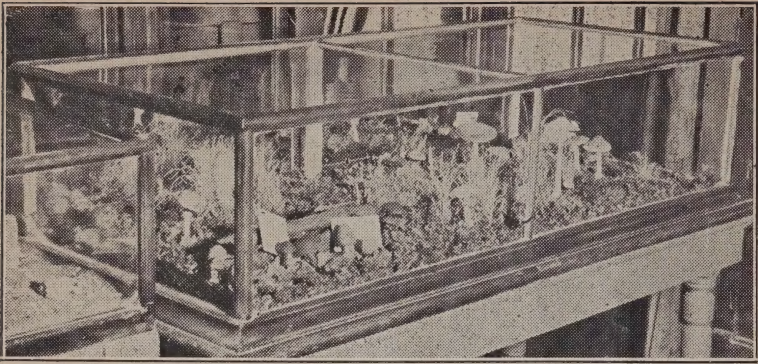
a valuable asset, and the obliterated panels are to be largely restored, on the completion of the dormitory.

The entire third floor of Biology Hall houses the museum, which was begun in 1873. It contains a wealth of natural history specimens, including collections of mollusc shells; star fish and sea urchins; corals, sea fans, sea whips and sea feathers; sponges; crabs and lobsters; huge bones of whales and porpoises; a beautiful habitat group of fungi in wax; an extensive insect collection; an Economic Botany exhibit; and many mounted animals. Rich collections of fossils, minerals, and cut and polished stones represent other fields of science.

In June, 1945, the department suffered a severe loss in the death of Professor Earl L. Lambert, who had been a member of the Biology Department Staff for twenty three years. He was an expert taxidermist, and left ample evidence of his skill, in the display of animals mounted by him, for the museum.



Egyptian Lotus in Pool



Museum Fungi, in Wax.

Neither of the present members of the staff is prepared to carry on this phase of museum work, or to teach taxidermy. However, other lines of museum work are being carried on, as time permits.

Our American antiques are noteworthy, while cases of relics from Japan, China, India, Africa, South America, and the North American Indians, represent civilizations other than our own. An outstanding collection of Indian Pottery was recently given to us by Mr. L. F. Gumbart of Macomb, an honorary member of our local chapter of Beta Beta Beta, national honorary biological fraternity,

Easily accessible to the college are many places of biological significance. The nearness of these points of interest makes it possible to augment the study of Biology in college class rooms, by valuable field trips.

Peonydale, near Macomb, is visited by classes in Nature Study, Economic Botany and Zoology, not only because of its peonies, but also because of the little glen which, while partially preserved in its natural state, has been transformed into a strikingly beautiful rock garden, clothing the sides of the deep ravine. The greenhouses and park at Keokuk provide still further opportunities for plant study.

"Wild-Cat Springs," on the outskirts of Hamilton, was established years ago by Mr. Homer Brown, who conceived the idea of retaining, in all of its natural beauty, this tract of land with its wooded hills, rugged ravines and beautiful springs where native wild cats are said to have slaked their thirst.



Display from Japanese Mission Field

His son and grandson continued his program, and even today the beauty of this park testifies to the wise forethought of its founder. On one of the bluffs in this park, a group of self seeded Scotch Pines is growing. Self-seeding of this species is very rare in Illinois.

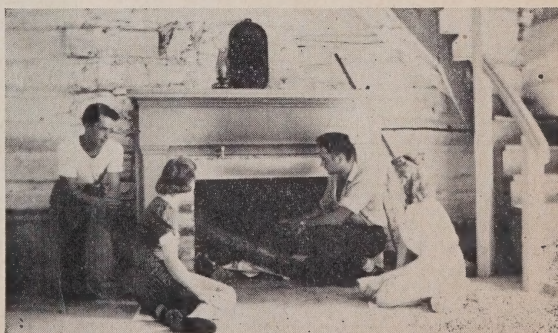
**Right, Spillway,
Wild Life Preserve**



Thornber Lodge, Wild Life Preserve.

Cooper Lake, the widened expanse of the Mississippi River resulting from building of the Kekuk dam, furnishes an interesting study in aquatic flora and fauna. Here migratory birds may be studied under ideal conditions. Lima Lake, once a large body of water in Hancock and Adams counties, has

**Right, Fireplace,
Thornber Lodge**





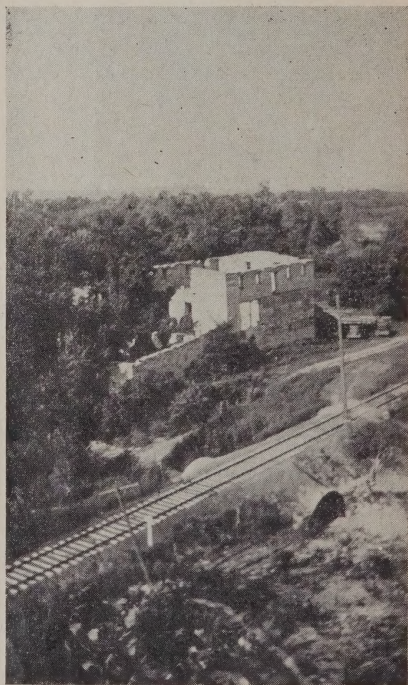
Stone Cabin, River Station

been largely drained, but it still provides valuable ecological studies of both plant and animal life.

Bacteriology and Hygiene classes visit our highly efficient city water system and sewage disposal plant, to study, at first hand, modern methods of sanitation, while the extensive Cooper Lake water system of Keokuk, Iowa, is also available for observation.

Keokuk, Hamilton and Warsaw industrial plants dealing with biological products most courteously conduct college classes through their establishments. The General and Economic Zoology classes make an annual tour of the Dadant Bee Foundation Factory at Hamilton, Illinois, the largest plant of its kind in the world, and they also visit the button factory at Warsaw. Eugenics and Hygiene classes make worthwhile visits to the State Psychopathic Hospital at Jacksonville, Illinois. An annual trip to the River Station is made by General Zoology and General Botany classes.

Students preparing for the professions of medicine and nursing are pri-



"Summer Camp," River Station



McCredie Lodge, River Station

vileged to visit the University of Iowa Hospital and Science Departments. Through the courtesy of Keokuk surgeons, our anatomy students are frequently permitted to observe methods in laboratory technique, X-ray procedure, and operations along varied lines. Also certain advanced classes are privileged to visit the state orthopedic clinics, at Macomb or Quincy, annually.

The state Museums of Iowa and Illinois are accessible, and in normal times are annually visited by advanced students and faculty members. The Mississippi and Illinois River valleys were once the home of the Mound Builders, who inhabited our country more than a thousand years ago, before the era of the American Indians. The Dickson Mounds, some sixty miles from Carthage, reveal the life habits of these people, through a carefully housed excavation of a group burial mound, in which the bodies and artifacts have been left exactly as they were when first uncovered. Prior to the War Era these mounds were visited annually, a custom which has been resumed since post war conditions permit a greater amount of auto travel.

OUTDOOR LABORATORIES

Many local and foreign plantings in the original virgin prairie soil have gone into the making of the arboretum and bird sanctuary on the north side of the campus; until now it appears to be a rich natural woodland. Its nearness makes possible, in a few moments, field trips in which one may observe, at first hand, a rich and varied flora.

Three larger arboreta and bird sanctuaries are located at some distance from the college. The Wild Life Preserve, a tract of about seven acres, two miles from Carthage, was purchased by the Biology department in 1921. Its varied contour and soils, and its artificial lakes, make it ideal as an aboretum

and sanctuary. Once typical of the upland timber areas of Hancock County, it still bears fine old trees of hickory, walnut, oak and ash. Much labor has been expended in restoring the native flora, and in adding a varied plant life suited to such a habitat, hence it is constantly increasing in scientific value, through the years.

"Thornber Lodge", a pioneer log cabin built at Powellton, sixteen miles away, in 1846, was moved to the Wild Life Preserve in 1936, and restored. This cabin serves as a meeting place for Biology classes and the Tri-Beta Biological Fraternity. The huge indoor fireplace; the wall seats surrounding the room; the kitchenette; the spacious terrace, and the outdoor fireplace make it a suitable resort for nature lovers. The Department permits other college organizations, and local groups such as Girl Scouts and Sunday School classes, to use the cabin.

Another outdoor laboratory, secured in 1932, consists of fifty-four acres of rugged land along the Mississippi, known as the Mississippi River Scientific Station. Ruins of huge stone buildings stand like ancient castles. Abandoned since 1866, they are indeed picturesque. The vine clad walls and the large trees growing in the vacant rooms, give a Rip Van Winkle touch to the scene. In one of the rooms is the summer cook camp with stone pantry, ice chest, tables and benches. A handsome outdoor furnace has recently been constructed here, thus equipping the commissary department for summer nature encampments.

Three old stone quarries on the land are rich in fossils, and many may be found along the creek beds. The sloughs and islands of the Mississippi abound in nature secrets, while rugged gullies, uplands, interesting timber and shifting shore lines are well worthy of study.



Spring
House
River
Station

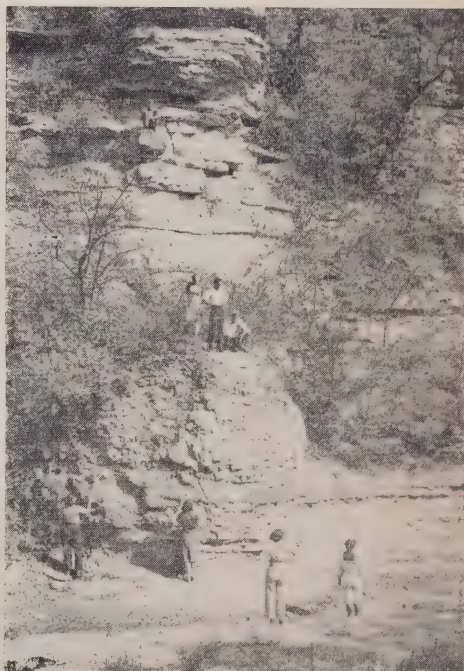


Miltner Lodge

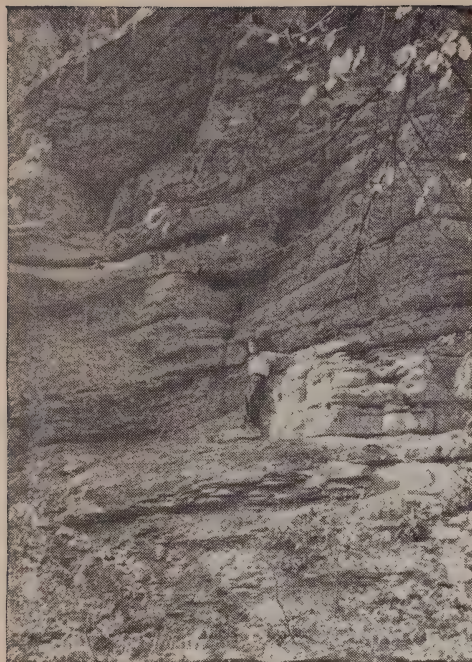
Cedar Glen, with its rich flora, sheer cliffs, rugged rocks, "hanging bridge", and upland timber tracts rich in "pin-cushion moss" and lichens, together with the handsome old Miltner home topping the Mississippi bluffs, is one of our very recent acquisitions. This 67 acre tract, is scarcely surpassed in this state as a nature haunt, being well known to biologists throughout this region. Miltner Lodge, the fine old nine room house, with Delco lights, and excellent furnace, provides a residential aspect for summer school sessions; while the railed inclosure on top of its roof provides an observatory hard to surpass, overlooking as it does, one of the most beautiful regions of the Mississippi River valley, and in its scope including three states.

Crystal Glen, closely adjoining Cedar Glen, and the "Sand Hills" near by, provide resources valuable, alike, to geologists and plant ecologists. Although not actually purchased, they are "ours to enjoy and to study."

The Sand Hills were formed by the meandering of five subterranean springs, leaving in their wake gullies and scantily fed streams, strikingly suggestive of the ramifications of the Grand Canyon of the Colorado, in miniature. The flora builds



Rocky Ledge, Cedar Glen



and changes with each passing season, and with the shifting wrought by weathering and "land slides".

The most recent acquisitions are the McCredie cottage with its 13 acres of adjacent land; the "Frank Place", with its farm residence and 26 acres; and the "Marsh 40" adjoining it. Thus the total area is slightly more than 200 acres, all connected, including over one mile of the Mississippi Bluffs, and a stretch of the shore line.

A partial view of Initial Rock bearing many illustrious names.



View of Trail, on "Hanging Bridge"

TRI-BETA

Our active Epsilon Chapter of Tri-Beta, National Honorary Biological Fraternity, was organized in 1930. Monthly luncheon meetings are held in the Department Assembly room, or on occasion at the Wild Life Preserve, the Scientific Station, or some other interesting or enjoyable spot. Annual evening meetings during the college year, widely attended by alumni and honorary members, are a mid-year banquet, and a picnic during Summer School.

The membership includes active, associate, honorary, faculty, alumni, and life members. The "Tri-Beta News", published annually before the war period, was sent to members everywhere, keeping them in touch with the local chapter. It was necessarily abandoned for the duration, but publication was resumed in the spring of 1946.



Side view of Hanging Bridge



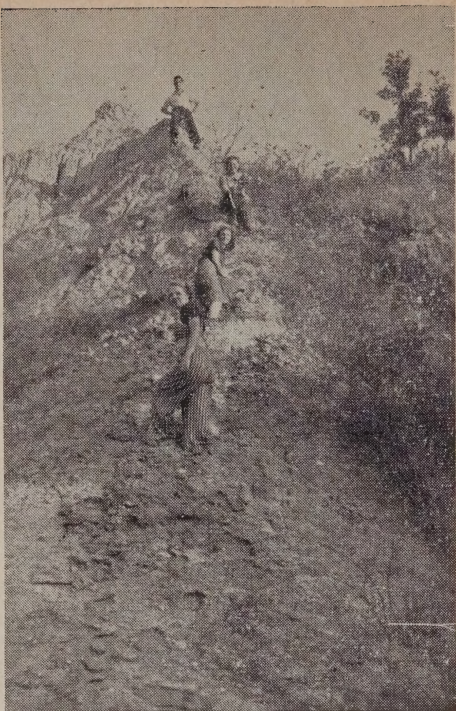
Tri-Betans enjoy annual summer picnic at Thornber Lodge,

Summer sessions at the River Station were interrupted because of war conditions, but have to some extent been resumed. Students desiring valuable experience in Field Biology should consult the Biology Staff, as early as possible, relative to time and extent of such work. Residence at the Station, after the regular Carthage College Summer Session, with a regular course or courses in Biology, may usually be arranged, if desired. Over night trips to the Station are conducted frequently, for interested advanced students.

The many alumni members who have gone into occupations involving Biological sciences are an inspiration to our under-graduate members. At the annual banquet on March 9, 1940, the tenth anniversary of the installation

Right, "Sand Hills," near Warsaw

Below, A favorite trip to the Sand Hills—Keokuk seen in the distance.



of the chapter was celebrated. Our chapter was host to the Fifth Annual Regional Tri-Beta Conference in May, 1942. The banquet was held in Denhart Hall, followed by an over-night trip to the River Station, where 52 guests were housed. After a bountiful breakfast served at summer camp, field trips to study plant and animal life gave a pleasing climax to the conference.

BIOLOGY COURSES

The courses offered by the Biology Department are sufficient in number and scope to permit the earning of a major in the field of either Botany or Zoology.

The courses in Botany:

General Botany	3	Plant Physiology	4	Economic Botany	2
Taxonomy	4	Plant Ecology	4	Histology and Micro-	
		Bacteriology	5	technique	3

The courses in Zoology:

General Zoology	3	Eugenics	2	Embryology of Ver-	
Ornithology	3	Economic Zoology	2	tebrates	4
Entomology	3	Comparative Anat-		Histology and Micro-	
Heredit and Gene-		omy of Verte-		technique	3
tics	2	brates	5		

Courses in Anatomy, Physiology, and Hygiene:

Human Physiology	3	Community Hygiene	2	Personal Hygiene	2
Human Anatomy	5				

Courses in Biological Education:

Teacher's Course in	Nature Study	3	Summer Biology Tour	
Biology 2 or 3			1 to 3	

Teaching Staff — Biology Department

ALICE L. KIBBEE, A.B., M.S., Ph.D., Professor of Biology and head of the department since 1920, received her A. B. and A. M. degrees from the University of Washington in 1910 and 1914 respectively. Six summers were spent in research and field work at the University of Washington Marine Biological Station, at Friday Harbor, Washington. A M. S. degree with a major in Plant Physiology, 1920, and a Ph. D. degree with a major in Taxonomic Botany, 1926, her thesis covering the flora of Hancock County, were earned from Cornell University. On five summer tours, accompanied by Biological students, she has covered all the states of the Union except North Dakota, and has reached into Canada and Mexico. On these trips many biological specimens were gathered, to be placed in the Natural History section of the Museum.

PAUL EDMUND HERING, A.B., M.S., Ph.D., Professor of Biology, Carthage College 1945. Dr. Hering received his A.B. degree from Columbia University on returning from several years stay in Switzerland where he received his secondary education. Upon completion of his undergraduate work, he went to Cornell University, from which he received his M. S. in 1927, with a major in Simnology. In 1932, he earned his Ph.D. degree and a major in Entomology and minors in Ornithology and Simnology. His thesis dealt with the insects feeding upon the mustard plants. He also wrote a paper on the food habits of the American Crow. He has travelled in Europe and in the United States, as well as in Mexico.



A Trip Through Crystal Glen

